

Position: PhD Research Engineer.

Salary: approximately 55 K€ gross per year.

Starting date: As soon as possible

Duration of the position: 18 months.

Main profile required: experience in the fields of models and software.

Travel area: Regional, mainly Nantes with occasional travel to Brest.

Sector of activity: HIGHER EDUCATION - University of Nantes.

Contact: Dalila.Tamzalit@univ-nantes.fr

Job description

Ecoplex is a project aiming at developing a tool-based approach for the eco-design of complex systems. The project is led by Obeo, an internationally recognized company in the field of Model-Driven Engineering (MDE), in partnership with Stirling Design International, Manta Innovation, EFINOR Sea Cleaner and Altran, industrial partners, and the LS2N (Laboratoire des Sciences du Numérique de Nantes), the academic partner.

The project aims to include the analysis of the environmental impacts of a system during its design and thus guide the conceptual choices in view of the results of the analysis. The aim is to define an innovative and multi-domain approach and to equip it through a digital environment based on the open-source software Capella. The application domain of the project is the naval domain. This project contributes to a Sustainable and Digital Industry.

The Laboratoire des Sciences du Numérique de Nantes (LS2N) is the academic partner of the project. The LS2N brings together 450 people at the heart of digital sciences, with 5 co-tutelles and partner. Its research activity is structured into 5 poles of competence and 5 cross-cutting themes including "Energy management and control of environmental impacts" and "Enterprise of the Future", themes that concern Ecoplex.

In this context, the LS2N recruits a research engineer M / F within the team NaoMod of the LS2N. The person recruited will be supervised by Dalila Tamzalit, associate-professor, specializing for over 15 years in the design of scalable and generic software architectures. She is also responsible for the transverse theme "Enterprise of the Future" of LS2N. This theme aims at helping companies and industries to optimize the design/proposition of products and services in an innovative way, at a lower cost and by reducing their ecological footprint. The research focuses in particular on the extraction and formalization of knowledge: establishing models and highlighting good practices for the purposes of assistance in steering, decision, reuse, adaptation and evolution.

Requested profile:

- Research:
 - PhD, preferably in Computer Science, ideally in Software Engineering.
 - Research experience in the fields of models and software.
 - Good level of English (oral and written) and French (desirable).
 - Ability to write scientific papers (English and French).
 - Knowledge of software product lines and variability management.
 - Knowledge of formal methods would be a plus.
- Technically:
 - Knowledge of MBSE principles and associated platforms (Capella, SysML...).
 - MDE modeling technologies (EMF, Eclipse environment).
 - Object programming language (Java).
 - Solid development experience.

- General skills:

- Ability to work in a project team involving several industrial partners.
- Dynamism and autonomy.

Missions:

The person will be recruited and paid by the University of Nantes. The work will be closely done with Obeo, focusing on the heart of the project: the development of an approach and its tooling under Capella. More precisely, the person recruited will have to:

- Become familiar with the different environments and domains required, namely Model-Based Systems Engineering (MBSE) and the standardized Life Cycle Assessment (LCA) method, also aiming at capitalizing on existing modeling.
- Work on the generic modeling of components generally used in the modeling of a naval system.
- Definition of a generic parameterized model.
- Define the reuse mechanisms of these components.
- Help to evaluate the different design alternatives of a naval system.
- Participate in software prototyping with interfacing/integration with Capella, in view of commercialization.